Modern Applied Science 2015 vol.9 N1, pages 242-249

Infrared spectroscopic studies of the PTFE and nylon membranes modified polyaniline

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Abstract

© by the author(s). Ion-selective membranes have a high degree of separation of the solutions, both with low and high concentrations of dissolved salts. Besides solutions using ion selective membrane occurs in the low operating pressures of 0.1-2 bar, depending on the substrate to which the working layer is applied. Lately, in the production of conductive polymers are used, such as polyaniline (PANI), for example for the manufacture of solar cells, sensor devices, for making protection from electrostatic charges and corrosion, as well as ion-exchange membranes. Use in the preparation of PANI, or modification has the advantages of ion exchange membranes in the communication and availability of raw materials and ease of manufacture and also because of such quality as high selective permeability. Modification of membranes to form on the surface and in the pores of the PANI layer, which is a cationic, allows to obtain ion-exchange membranes are not inferior in selectivity by reverse osmosis on a number of cations. The aim is to establish the chemical nature of using FTIR spectroscopy layer surface modification of PTFE and nylon membranes by polymerization of aniline and the study of possible changes in the properties of membranes such as exchange capacity and moisture content. In this operation the composite membranes prepared from cation-modified surface layer on the substrate a polyaniline and nylon of PTFE. The results of the study by infrared spectroscopy of the molecular structure of polyaniline and a number of materials on its basis.

http://dx.doi.org/10.5539/mas.v9n1p242

Keywords

IR spectroscopy, Membrane Polyaniline, Moisture, Nylon, PTFE